comprising a catalytic body, a constant-current heating power supply circuitry connected to the catalytic body, a constant-voltage bias voltage power supply connected to the heating power supply circuitry to apply a bias voltage across two terminals of the heating power supply circuitry, a gas-supply port through which a cleaning gas is introduced in the reaction chamber, and means for changing the polarity of the bias voltage applied across the two terminals of the heating power supply circuitry based on a kind of the cleaning gas, as recited in independent claim 1.

The Office Action impliedly admits that none of the applied references disclose or suggest the claimed feature of the constant-voltage bias voltage power supply connected to the heating power supply circuitry to apply a bias voltage across two terminals of the heating power supply by asserting that the Drawings of the current application do not support this feature and states that this feature would be the subject of a rejection under 35 U.S.C. §112, first paragraph, for new matter (Office Action, page 3, lines 1-2). Accordingly, the Patent Office did not provide a proper rejection for this feature.

However, Applicants respectfully remind the Patent Office that the Specification at least at page 14, lines 23-25, teaches that "the constant-voltage power supply 8 can control an electric potential to be applied from the heating power supply 6 to the catalytic body 4, i.e., a voltage across the terminals of the heating power supply 6" (emphasis added). Accordingly, the specifically claimed feature of a constant-voltage bias voltage power supply connected to the heating power supply circuitry to apply a bias voltage across two terminals of the heating power supply circuitry is well supported

in the Specification. Applicants submit that in view of the above, a new matter rejection would be improper.

Regarding the obviousness rejection of record, the Patent Office admits that Ishibashi fails to teach the above-discussed features of independent claim 1, and relies on Sawayama, Dowling and Harris to cure this deficiency. Sawayama merely teaches a plasma CVD process, Dowling teaches cathodic protection to mitigate and prevent corrosion, Harris teaches that anodic protection increases corrosion resistance, and Reale teaches a corona generating device. Applicants submit that none of these references disclose or suggest the specifically recited feature of a constant-voltage bias voltage power supply connected to the heating power supply circuitry to apply a bias voltage across two terminals of the heating power supply circuitry, as recited in independent claim 1.

The Patent Office further asserts that the claimed feature of changing the polarity of the bias voltage based on a kind of the cleaning gas constitutes "intended use" and that there is no description of "automatic detection of the kind of cleaning gas" in Applicants' specification (Office Action, page 3, lines 6-13 and page 8, lines 3-5). The Patent Office further asserts that it would have been obvious to a person of ordinary skill in the art to "have applied either a cathodic or anodic bias voltage" (Office Action, page 7, lines 12-15). Applicants submit that the feature of "automatic detection of the kind of cleaning gas" is currently not claimed, which renders this argument moot.

The Office Action asserts that "there is no structure limitation" related to changing the voltage based on the cleaning gas (Office Action, page 9, lines 5-9). Applicants

submit that the feature of changing the polarity of the bias voltage based on a kind of cleaning gas does constitute a structural limitation and does not constitute "intended use" because the resulting bias voltage, which is a quantifiable and physical entity, would be different depending on the cleaning gas. Accordingly, independent claim 1 recites a physical feature, i.e., the bias voltage, which would be different based on the nature of another physical feature, i.e., the kind of cleaning gas. As such, Applicants submit that the recitation of the above-discussed feature of independent claim 1 does not constitute "intended use," as alleged in the Office Action, but instead constitutes a structural limitation under the proper interpretation of 35 U.S.C. § 112, sixth paragraph.

In addition, although Dowling and Harris teach applying a cathodic and an anodic bias, respectively, neither reference teaches that the polarity of the bias, i.e., cathodic or anodic, changes based on the nature of the cleaning gas or anything else. None of the other applied references cure this deficiency.

With respect to changing the polarity of the bias voltage, although Dowling discloses that cathodic protection prevents corrosion by introducing an electrical current from external sources to counteract the normal corrosion reactions (col. 1, lines 38-41), the cathodic protection consisting of applying a voltage to the material to be protected from undergoing corrosion, Dowling does not disclose or suggest providing a bias voltage power supply to apply a bias voltage across a heating power source. That is, cathodic protection disclosed in Dowling is not the same as applying a bias voltage across a heating power source.

With respect to the Harris reference, the Office Action asserts that Harris is "in an analogous art in the field of corrosion resistance of metal...'803 [Harris] teaches that corrosion resistance during anodic bias at certain species" (*sic*) (Office Action, page 7, lines 3-5). However, a closer examination of Harris reveals that Harris in fact teaches improving corrosion resistance as a result of a completed electrochemical process. Harris teaches that when the electrochemical process is terminated, improved corrosion resistance is achieved for the resulting material. Harris does not teach or suggest applying a bias voltage to provide corrosion resistance, but rather teaches that the material resulting from the completed anodic treatment is more corrosion resistant. Accordingly, Harris fails to teach or suggest applying an anodic potential to improve corrosion resistance, as is alleged in the Office Action. Furthermore, as discussed above, Harris does not disclose or suggest applying a bias voltage across a heating power source.

For at least a combination of the above reasons, Applicants submit that none of the applied references, alone or in combination, arrive at the subject matter of independent claim 1. Accordingly, claim 1 is patentable over all the applied references. Claims 2-3, 6-9, and 20, at least for depending from claim 1, and for the additional features recited therein, are also patentable over all the applied references. Accordingly, all the pending claims are patentable, and withdrawal of the rejection of the claims under 35 U.S.C. §103(a) is respectfully requested.

Should the Examiner determine that any further action is necessary to place this application into better form, the Examiner is encouraged to telephone the undersigned representative at the number listed below.

In the event this paper is not considered to be timely filed, the Applicants hereby petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, referencing Attorney Docket No. **029567-00010**.

Respectfully submitted,

Tarik M. Nabi
Registration No. 55,478

Customer Number 004372
ARENT FOX LLP
1050 Connecticut Avenue, NW, Suite 400
Washington, DC 20036-5339
Telephone: 202-857-6410
Fax: 202-638-4810

GEO:TMN